

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A face identification device comprising:

detection means for detecting face images from original images taken by a camera;

storage means in which a face image of a specific person is previously or subsequently stored;

determination means for determining whether a face image detected by the detection means matches with the face image stored previously or subsequently in the storage means by comparing both face images; and

abstraction process means for applying an abstraction process to a face image out of the face images detected by the detection means from the original images in order to make the face image unrecognizable,

the abstraction process means applying the abstraction process exclusively to a detected face image when the determination means determines that the detected face image is not a specific person, and not applying the abstraction process to a detected face image when the determination means determines that the detected face image is a specific person, wherein

the storage means stores the original image abstracted by the abstraction process means,

when a new face image is stored in the storage means subsequently, the abstraction means restores to the original image abstracted by the abstraction process means in the storage means,

the detection means detects face images from the restored original image, and

the determination means determines whether a face image in the restored original image detected by the detection means matches with the new face image stored subsequently in the storage means by comparing both face images.

2. (Previously Presented) The face identification device according to claim 1, wherein said abstraction process is a mosaic process for making a face image portion mosaic.
3. (Currently Amended) The face identification device according to claim 1 ~~or 2~~, wherein when said determination means determines that the detected face image is a specific person, a detected face image is not applied with the abstraction process and is applied with a marker.
4. (Currently Amended) The face identification device according to claim 1 ~~or 2 or 3~~, wherein when a face image detected by said detection means is determined to match with the face image stored in said storage means, the image of the specific person which is not applied with the abstraction process on the face and remaining parts thereof and the images of people other than the specific person which are applied with the abstraction process exclusively on the faces thereof are displayed, and a warning is also outputted.

5. (Currently Amended) A face identification method comprising the steps of:

detecting face images from original images taken by a camera;

determining whether a detected face image matches with a previously or
subsequently stored face image of a specific person by comparing both face
images;

applying an abstraction process exclusively to a detected face image in order to
make the detected face image unrecognizable, when it is determined that the
detected face image is not a specific person;

not applying the abstraction process to the detected face image when it is
determined that the detected face image is a specific person;

when a new face image is stored subsequently, restoring the original images taken
by the camera;

detecting face images from the restored original images; and

determining whether a face image from the restored original images matches with
the new face image stored subsequently by comparing both face images.

6. (Currently Amended) A face identification system comprising:

at least one video camera for acquiring images of people; and

a face identification device for comparing said acquired images with images of
specific people previously or subsequently stored in said face identification device
to determine whether at least one of said acquired images matches at least one of
said stored images of specific people, if said face identification device determines
that said match does not exist, changing said at least one of said acquired images
to make said at least one of said acquired images unrecognizable, subsequently
storing additional new images of specific people in said face identification device,

changing said at least one of said acquired images to make said at least one of said acquired images recognizable again, and comparing said recognizable again image with said additional new images of specific people subsequently stored in said face identification device.

7. (Currently Amended) A face identification system comprising:

a computer;

image input circuitry that provides input images to the computer; and

previously or subsequently stored face image data for a set of at least one registered face of a specific person,

the computer executing a procedure that includes:

detecting a set of faces in an input image;

for each face in the set of detected faces, comparing it with the previously or subsequently stored face image data;

if the face does not match any of the set of registered faces of specific people, making the face unrecognizable in a version of the input image;

after another new face image is subsequently stored, making the face recognizable again; and

comparing the another new face image subsequently stored with the recognizable again face image.

8. (Previously Presented) The system of claim 7 in which the computer makes the face unrecognizable by applying a mosaic process.

9. (Previously Presented) The system of claim 7 in which the procedure further includes storing the version of the input image.

10. (Previously Presented) The system of claim 7 in which the input circuitry includes a digital camera.
11. (Previously Presented) The system of claim 7 in which the input circuitry includes a scanner.
12. (Currently Amended) A face identification system comprising:
 - a computer;
 - stored image version data for a version of an original image in which a face in the original image has been made unrecognizable; and
 - stored face image data for a registered face;said computer executing a procedure that includes:
 - using the stored image version data to reconstruct the original image;
 - detecting a set of faces in the reconstructed original image; and
 - for each face in the set of detected faces in the reconstructed original image, comparing the face with ~~the stored~~ new face image data and if the face matches the ~~stored~~ new face image data, providing an indication of a match,wherein the stored face image data for a registered face is stored after the face in the original image has been made unrecognizable.

13. (Currently Amended) A face image detection method comprising:

detecting a set of faces in an input image;

for each face in the set of detected faces, comparing it with previously stored face image data and if the face does not match any of the set of stored image face data, making the face unrecognizable in a version of the input image, and if the face matches any of the set of stored image face data, making the face recognizable in a version of the input image; and

for each face in the set of recognizable detected faces, comparing it with subsequently stored new face image data.

14. (Currently Amended) A face image detection method comprising:

reconstructing an original image using stored image version data, the stored image version data being for a version of the original image in which a face in the original image has been made unrecognizable;

detecting a set of faces in the reconstructed original image; and

for each face in the set of detected faces in the reconstructed original image, comparing it with subsequently stored new face image data and if the new face matches a registered face, providing an indication of a match,

wherein the stored face image data is stored after the face in the original image has been made unrecognizable.

15. (Previously Presented) A face image detection method comprising:

detecting a set of faces in an input image, comparing each face in the set of detected faces with previously stored face image data;

if a face does not match any of the previously stored image face data, applying a mosaic process to make the face unrecognizable in a version of the image;

if the face matches previously stored image face data, applying a marker to the face in the version of the image and providing a name of the matching stored image face data; and storing the version of the image;

when ~~additional~~ new face image data is stored subsequently, reversing the mosaic process to make the face recognizable again; and

comparing the recognizable again face to the ~~additional~~ new face image data to determine whether there is a match.